



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,863	06/14/2001	Olivier D. Lapicque	ATI-0100610	8527
34456	7590	12/08/2005	EXAMINER	
TOLER & LARSON & ABEL L.L.P. 5000 PLAZA ON THE LAKE STE 265 AUSTIN, TX 78746			PENDLETON, BRIAN T	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,863

Applicant(s)

LAPICQUE, OLIVIER D.

Examiner

Brian T. Pendleton

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-29 is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-22 and 30-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 9, 31, and 38 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Parent claims 8, 30, and 37 indicate that the number of coefficients assigned are different for the first and second voices, however, claims 9, 31, and 38 each recite that the number of filter coefficients are equal.

Claim 39 objected to because of the following informalities: It is listed in the body of claim 38. It appears to be a typographical error. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 3, 8, 11, 12, 15, 16, 19, 22, 30, 33, 34, 37, 40, and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki, US Patent 6,343,130. Yamazaki discloses a stereophonic sound processing system comprising high-precision filter 21, low-precision filter

Art Unit: 2644

22, and switching means 23 in figure 8. As shown in figure 11 and disclosed in column 4 lines 57-61, the difference between the filters is the number of taps (number of coefficients). The filters 21 and 22 represent first and second level of precision using FIRs. According to the embodiment of figure 19, the sound source is a first voice having a first characteristic when the sound image is localized in the front of the user and a second voice having a second characteristic when the sound image is localized to the back of the user. Claim 1 is met. As to claims 2, 8, 15, 16, 22, 30, and 37, the reference meets the limitations as the FIR is used for sound localization inherently using head related transfer functions. Regarding claims 11, 33, and 40, the embodiment of figure 19 is based on sound localization determined prior to receiving the incoming sound source. As to claims 3, 12, 19, 34, and 41, the sound localization parameter which determines the use of either filter 21 or filter 22 is based on distance. It is of note that the claim language does not specify that the first and second voice are two different signals (from different sources) that are sent simultaneously whereby the processing/assigning of the voices/coefficients are done simultaneously. This claim language obviates this rejection which is based on the fact that a signal sound source signal can be processed differently at distinct times.

Claims 1, 2, 8, 15, 16, 22, 30, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kamiya et al, US Patent 6,643,674. Kamiya discloses a digital filtering method and device for sound image localization comprising wave input buffer 302 for receiving sound source signals from bus unit 2 and filtering processing section 305. As disclosed column 15 lines 54-66, the number of coefficients is inversely related to the number of sound sources in localization using head related transfer functions. The voice data is, for example, a sound with 4

Art Unit: 2644

sources, or a sound with 14 sources, of which different levels of localization precision is effected. Claims 1, 2, 8, 15, 16, 22, 30, and 37 are met.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7, 9, 13, 14, 20, 21, 31, 35, 36, 38, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Connor et al. Yamazaki does not disclose that the first and second characteristic includes first and second audio types. In figures 2 and 4, Connor discloses a spatial audio processing method and apparatus comprising sources 1, 2, 3 (voices) and FIR filters in processors 36, 38, 40. Column 2 lines 39-50 disclose that the characteristic of the voices have different audio types. Lines 60-66 suggest that the type of audio source can determine its sound localization. Yamazaki teaches that sound localization determines its precision of processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Yamazaki by determining the precision of processing based on audio type, as taught by Connor et al, for the purpose of allocating the processing resources for the sound sources that are in most need of localization. Claims 4, 13, 20, 35, and 42 are met. Per claims 5, 6, 14, 21, 36 and 43, the abovementioned section also discloses that the voices have different priority levels (foreground/background) and directional

Art Unit: 2644

controller 27 is used to prioritize the voices. Per claim 7, see figure 4. As to claims 9, 31, and 38, Connor discloses an equal number of coefficients for the different sound sources.

Claims 10, 17, 32, and 39 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki. Yamazaki does not disclose that the first and second characteristic are determined prior to receiving the sound source signal. Examiner takes Official Notice that it was well known to determine the characteristic of an incoming signal before receiving it through the use of header information, among other techniques, with the advantage of reducing processing time. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Yamazaki to determine the characteristic of the sound source prior to receiving it.

Allowable Subject Matter

Claims 23-29 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 2644

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian T. Pendleton
Primary Examiner
Art Unit 2644



btp